

REMARKS

Claims 40-96 are pending in the present application.

In the Office Action mailed February 3, 2004, the Examiner rejected claims 40-96 under 35 U.S.C. § 102(b) as being anticipated by Kondo, U.S. Patent No. 6,526,028 B1. These rejections are respectfully traversed.

Rejection of Claims 40-96 under 35 U.S.C. § 102(b)

In a wireless communications system, a subscriber station may access a network or communicate with other subscriber stations through one or more base stations dispersed throughout a geographic region. The geographic region is generally divided into cells with each base station assigned to one cell. A subscriber station in communication with one base station may be handed off to another base station when the subscriber station moves into a new cellular region.

In conventional systems, the process of handing off a subscriber station from one base station to another is based on the signal strength of a forward link pilot signal transmitted from each of the base stations. A handoff may be initiated when the subscriber station in communication with one base station detects an increase in the pilot signal strength of a new base station as it travels into the transition region between the two cells. When the pilot signal strength reaches a certain level, the subscriber station establishes communications with the new base station. At this moment, the subscriber station communicates with both the new and original base stations. This mode of communication continues until the signal strength from the original base station drops below a certain level that causes the subscriber station to terminate communications with the original base station.

Kondo discloses a slight variation on this conventional approach. According to Kondo, a subscriber station traveling through the transition region of two cells will communicate with both the new and original base station only when the forward link signals experience a high degree of fading. If the fading of the forward link signals from the two base stations is small, the subscriber station will communicate only with the base station with the strongest pilot signal (i.e., the minimum propagation loss) to reduce interference affecting other communications.

Applicant discloses a novel and unobvious handoff procedure that constitutes a significant departure from the conventional approach. Instead of initiating a handoff from one

base station to another based on the strength of the forward link pilot signal transmitted from each, the handoff is based on the quality of the reverse link. Because the forward and reverse links may have different operating frequencies, the signal quality in the forward direction may be different than the quality seen in the reverse direction. Accordingly, a strong forward link pilot signal from a new base station, which is detected by a subscriber station moving into the transition region between two cells, does not necessarily mean that the reverse link quality is sufficient to support communications. Applicant's handoff procedure uses the forward link pilot signal to identify a candidate base station, but does not actually handoff the subscriber station to the new base station until the signal quality of the reverse link is adequate.

This concept is clearly drawn out in the claims where the decision to handoff a subscriber station from one base station to another is based on some reverse link quality indicator. Independent claims 40, 49, 59 and 69, for example, each recite a method, apparatus or system in which a subscriber is handed off to a first base station based, at least in part, on "whether signals transmitted by the subscriber station are received by the first base station with sufficient energy according to the reverse link power control commands received from the first base station." (Emphasis added).

Similarly, independent claims 76, 80, 84 and 87 each recite a method, apparatus or system in which the handoff is performed in accordance with the "reverse link power control commands." (Emphasis added).

Independent claims 88 and 89 each recite an apparatus in which the handoff is performed in accordance with stored messages indicating a "rate request of reverse link transmissions" received from one or more base stations. (Emphasis added). The reverse link transmission rate request generated by each base station is based on the quality of the reverse link.

Independent claims 90 and 94 each recite a method or apparatus in which handoff is prohibited if "the first base station is not receiving reverse link transmissions," and allowed if "the first base station is receiving reverse link transmissions." (Emphasis added).

Finally, independent claim 83 recites a system in which the handoff is performed in accordance with stored messages indicating "the average quality of a reverse link signal" received from one or more base stations, and claim 94 recites a method in which handoff is

performed in accordance with messages indicating "reverse link reception quality" received from one or more base stations. (Emphasis added).

While Kondo discloses a wireless communications system having a handoff procedure and a reverse link power control procedure, it does not teach or suggest basing the handoff decision on the reverse link power controls, or any other reverse link quality indicator for that matter. Rather, Kondo deals with the number of base stations that the subscriber station communicates with while traveling through a cellular transition region. As discussed above, this number is based on the forward link fading environment independent of the reverse link signal quality. Accordingly, Kondo is legally insufficient to support an anticipatory rejection of independent claims 40, 49, 59, 69, 76, 80, 83, 84, 87, 88, 89, 90, 94 and 96.

Claims 41-48, 50-58, 60-68, 70-75, 77-79, 81, 82, 85, 86, 91-93, and 95 are all dependent, either directly or indirectly, from one of the foregoing independent claims, and therefore, include all the limitations of the claims from which they depend. Accordingly, these claims are also allowable for the same reasons set forth hereinbefore, as well as the additional limitations recited therein.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application is earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

Dated: 5/13/2004

By: Sandra L. Godsey
Sandra L. Godsey, Reg. No. 42,589
(858) 651-4517

QUALCOMM Incorporated
5775 Morehouse Drive
San Diego, California 92121
Telephone: (858) 651-4125
Facsimile: (858) 658-2502